

Workers' Compensation and Other Costs of Injuries and Illnesses in Construction (I)

The more than 194,000 annual injury and illness cases with days away from work in construction mean losses not only to workers, but also to their families, employers, and society. Some of the costs are in wage replacement and medical payments, direct – billable – costs that can be measured. But those workers' compensation payments reflect only a small part of injury- or illness-related expenses.

Many costs are not compensated, partly because they are difficult to tie to specific work exposures. Construction workers may move among several employers in a year or even dozens of employers in a career. Work-related musculoskeletal disorders, which can be extremely costly in expense and suffering, often develop through repetition over months or years. Similarly, work-related illnesses, such as cancers or nervous system diseases may not appear for many years after worker exposures to asbestos, solvents, or other toxics in the workplace.

The nonbillable costs are borne by families through bills for prescriptions, home care, and health supplies; reduced time to care for children; and reduced income or productivity as a result of having to stay home to care for an ill family member. Employers, too, bear some nonbillable costs through reduced worker productivity. Society pays in increased Social Security taxes, higher health care premiums, and reduced savings for retirement.

Published estimates of the total cost of nonfatal injuries in all industries in the United States range from \$131.2 billion to \$145 billion per year.¹

For an employer, who pays workers' compensation insurance premiums, costs of injury can threaten survival in a highly competitive environment. A construction company operating at a 3% profit margin would have to increase sales by \$333,000 to pay for a \$10,000 injury, such as the amputation of a finger (chart 48a).

Some of the most useful information on direct costs comes from the insurance industry. Liberty Mutual, which underwrites workers' compensation insurance, compiles a list

of the 10 causes of injuries and illness which cost the most in wage replacement and medical payments (chart 48b). The 10 leading causes listed were reportedly responsible for \$34.5 billion or 86% of the total \$40.1 billion paid by employers in 1999. Although no breakdown is available for construction, the items listed match those of greatest concern in construction and 32% of total estimated costs involved ergonomics (overexertion and repetitive motion) (*see* chart book page 36).

Based on a close examination of 573 injury reports from 103 mid-size and large construction companies in 34 states² and on more-recent research, Jimmie Hinze has found a ratio greater than 2 to 1 for indirect to direct costs of injuries resulting in lost worktime. He has found, as well, that a less-serious injury, resulting in medical costs but no missed workdays, can still result in indirect costs that more than match the medical bills. The ratios are believed to be underestimates of the true costs, because many costs are not quantified, such as decreased workforce morale and harm to a company's competitiveness (*see* chart 48c). It is generally believed that the true ratio of indirect to direct costs of injuries has declined substantially in the past two decades, as a result of dramatically increased medical costs (Jimmie Hinze, M.E. Rinker Sr. School of Building Construction, University of Florida, personal communication, April 2002).

Looking at direct and indirect costs, Lisa Roché, an epidemiologist, used methods developed by Ted Miller and others to estimate that work-related deaths in New Jersey in 1992 cost \$1.07 million each, including lifetime lost wages and benefits, workplace costs (hiring and training replacement workers, disrupted productivity), lifetime lost household production (including nonmonetary activities), and medical and legal costs related to a death.³ If "quality of life" – the value placed on avoiding pain, suffering, and lost enjoyment – is counted, the cost of each death would increase by \$1.69 million.

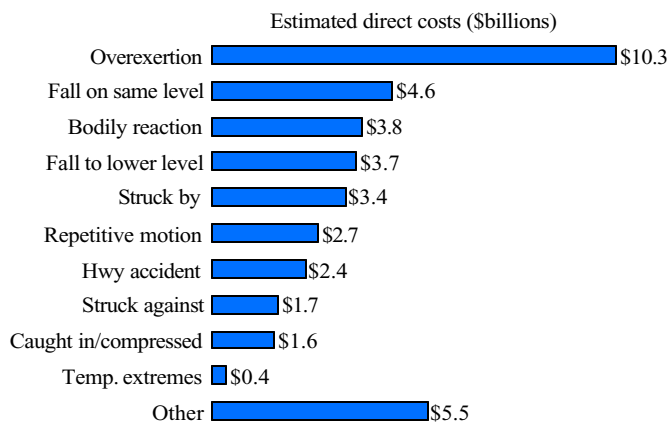
1. The lower figure, for the year 2000, is from the National Safety Council, *Injury Facts, 2001 Edition*, Itasca, Ill., 2001; the higher figure, described as a low estimate for direct and indirect costs, is from J. Paul Leigh and others, *Occupational Injury and Illness in the United States, Archives of Internal Medicine*, 1557-68, July 1997.

2. Jimmie Hinze, *Indirect Costs of Construction Accidents*. Construction Industry Institute, Austin, Texas, November 1991. *See* Jimmie Hinze, *Construction Safety*, Upper Saddle River, N.J.: Prentice-Hall, 1997.

3. Lisa M. Roché, *Economic Costs of Occupational Injury Fatalities in New Jersey in 1992*. In Bureau of Labor Statistics, Department of Labor. 1995. *Fatal Workplace Injuries in 1993: A Collection of Data and Analysis*. Washington, D.C.: U.S. Government Printing Office, Report 891, 28-31, June 1995. The work has reportedly not been updated.

48a. Sales needed to cover direct costs of injury, at various profit margins

Direct costs of injury	Profit margin				
	1 percent	2 percent	3 percent	4 percent	5 percent
\$1,000	\$100,000	\$50,000	\$33,000	\$25,000	\$20,000
\$5,000	\$500,000	\$250,000	\$167,000	\$125,000	\$100,000
\$10,000	\$1,000,000	\$500,000	\$333,000	\$250,000	\$200,000
\$25,000	\$2,500,000	\$1,250,000	\$833,000	\$625,000	\$500,000
\$100,000	\$10,000,000	\$5,000,000	\$3,333,000	\$2,500,000	\$2,000,000

48b. Estimated direct costs for workplace injuries and illnesses, all industries, 1999**48c. Some indirect costs to an employer of an injury on a construction site**

- Loss of productivity
 - Job shutdown at the time of injury
 - The injured worker - at the time of injury
 - The injured worker's reduced capacity upon return to work
 - Co-workers at the time of the injury: watching and helping the injured
 - Co-workers who are short-handed following injury
 - Co-workers who must train a replacement worker
 - Supervisor/management time hiring or retraining a temporary or permanent replacement worker
 - Management time investigating and reporting on the incident to government, insurance, and news media representatives
- Fines
- Production delays
- Damaged equipment and the costs of repairing or replacing it
- Lawsuits
- Damage to the company image and reduced company competitiveness
- Higher workers' compensation premiums
- Reduced worker morale

Note: Chart 48b - Workers' compensation direct costs – wage replacement and medical payments – totaled \$40.1 billion in 1999. Bodily reaction is a single incident of free body motion, such as when slipping without falling; "struck by" an object might be when a tool falls from above; temperature extremes include exposures to hot or cold environments and contact with hot or cold objects; an example of "struck against" an object would be a worker walking into a door frame.

Source: Chart 48a - Richard Jacobsen, Raytheon Engineers & Constructors, presentation to Second National Conference on Ergonomics, Safety, and Health in Construction, Washington, D.C., June 19, 1995.

Chart 48b - Liberty Mutual Group, based on company data and data from the U.S. Bureau of Labor Statistics and the National Academy of Social Insurance. www.libertymutual.com

Chart 48c - Jimmie Hinze, *Indirect Costs of Construction Accidents*. Construction Industry Institute, Austin, Texas, November 1991.